REMARKS

In the Office Action, the drawings are objected to under 37 CFR 1.83(a). Claims 1-5 were rejected under 35 USC §112, second paragraph. Claims 1-3 were rejected under 35 USC §102(b) as being anticipate by O'Brian in view of Hattori. Claim 4 was rejected under 35 USC §103(a) as being unpatentable over O'Brien in view of Hattori in further view of Sheets. Claim 5 was rejected under 35 USC §103(a) as being unpatentable over O'Brian, Hattori and in further view of Sheets and Jung et al.

In response to the rejection under 35 USC §112, claim 1 has been amended to specify that the cooling means are placed in the sheet-like support or between the sheet-like support and the crystals. This amendment clarifies the connection relations of he sheet-like support, the cooling means, the coating of lacquer, the layer of liquid crystals and the heatable elements and that the claims thus does not omit essential structural cooperative relations of elements. Figure 4 and 5 have been added as suggested by the Examiner.

The embodiment referred to in the above mentioned drawings and claim amendments are described in the specification. On page 4, lines 1-6, it is stated that in one embodiment, depicted in Fig. 3, the cooling means consists of one or several channels or is designed like a jacket so that the sheet-like support is hollow whereby a cooling medium can pass through the sheet-like support.

In an alternative embodiment, stated in the specification on page 4, lines 8-16, the cooling means may consist of peltier elements arranged under the heatable elements. Further, it is also stated in the description that the peltier elements can be used instead of the heatable elements.

The present invention relates to a display device consisting of a sheet-like support, covered with a layer of liquid thermocromic crystals, which are separately tempered by individual power supply to individual heatable elements lying close to the liquid thermocromic crystals and placed between the sheet-like support and the liquid thermocromic crystals. The liquid thermocromic crystals assume different shades of color dependent on the given temperature so that hereby the color of the liquid thermocromic crystals will form a certain pattern and hereby a figure. The design of the pattern is thus dependent on which of the heatable elements that are activated.

U.S. Patent No. 4,142,782 (O'Brian) discloses a display arrangement. The display arrangement includes a sheet-like metallic support provided with areas of different thermocromic compositions. As this display arrangement is heated or cooled the areas will change in color when the temperatures within these areas changes sufficiently to cause a color change. The transition temperatures varies with the thermocromic compound or composition used in those areas. According to U.S. Patent No. 4,142,782, the

design of the figures will appear in accordance with the location of the thermocromic crystals. The thermocromic crystals, however, are located in different, specific areas in specific patterns as can be seen from the figures.

As stated in the Office Action, U.S. Patent No. 4,142,782, does not disclose a display device where the liquid thermocromic crystals are distributed over a complete layer covering the support and without a specific pattern, where the design of the figure is determined only by tempering the small heatable elements which are located according to said design, and where the liquid thermocromic crystals are covered by a coating.

In the Action the Examiner refers to a reference denoted Hattori, U.S. Patent No. 5,649,766A. The correct patent number should probably read U.S. Patent No. 4,945,919A, referenced in the search of U.S. Patent No. 5,649,766A and after having performed a search on the U.S. Patent and Trademark Office homepage with search terms "Hattori" and "thermocromic". The following argumentation is therefore based on U.S. Patent No. 4,945,919 which has not yet been made of record by the Examiner.

U.S. Patent No. 4,945,919 discloses a rhinological diagnostic device in the form of a multi-layer sheet comprising a transparent plastic layer, a thermocromic liquid crystal layer, a black coating layer and a support layer. In use, this multi-layer sheet is positioned beneath the nose to cause expired air from the

nostrils to impinge on the transparent plastic layer for diagnosing an abnormality in the nasal cavity based on the resulting topographic color pattern in said thermocromic liquid crystal layer.

U.S. Patent No. 4,945,919 thus discloses a display device where the liquid thermocromic crystals are distributed over a complete layer without a specific pattern, and where the liquid thermocromic crystals are covered by a protective coating.

U.S. Patent No. 4,945,919 is however not, as in the present invention, provided with individually heatable elements lying close o the liquid thermocromic crystals and placed between the sheet-like support and the liquid thermocromic crystals. Instead, it is the heat of expired air from the subject's nasal cavity which impinges on the thermocromic liquid crystal sheet that gives rise to the color change of the thermocromic liquid crystals. U.S. Patent No. 4,945,919 does thus not teach a display device where the design of the figure is determined only by tempering small heatable elements which are located according to said design. Instead, the figure appearing on the device U.S. Patent No. 4,945,919 is purely dependent on the heated air impinging it and it is thus not possible to perform different specific designs of the image that is to be displayed.

Since neither U.S. Patent No. 4,142,782 nor U.S. Patent No. 4,945,919 teach a display device where the design of the figure

is determined only by tempering small individually heatable elements which are located according to said design, and since there is nothing in U.S. Patent No. 4,945,919 that indicates that the technology disclosed therein could be modified to a device where the design of the figure is determined only by tempering small individually heatable elements which are located according to said design, one of ordinary skill in the art with knowledge of both U.S. Patent NO. 4,142,782 and U.S. Patent No. 4,945,919 would not arrive at the present invention.

The present invention has substantial advantages over the prior art. The display device according to the present invention may show an arbitrary figure where the design of the figure is formed only by those heatable elements being tempered, and which are located according to said design. The inventive idea of the present invention further includes that the support includes cooling means which are controlled to cool down the liquid thermocromic crystals and/or keep the support of the crystals at a certain temperature, which is lower than the temperature at which the liquid thermocromic crystals are colored. It is hereby possible to very quickly change from one arbitrary figure to another arbitrary figure. The present invention further allows a very sharp figure since the temperature of the support can be kept at a certain degree irrespective of the surrounding temperature,

and thereby keep all the liquid thermocromic crystals that does not constitute part of the figure at a certain color.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted,

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